

Exam. Code : 103202

Subject Code : 1037

B.A./B.Sc. 2nd Semester

QUANTITATIVE TECHNIQUES—II

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt **FIVE** questions in all, Question No. 1 is compulsory and attempt **ONE** question from each of the **four** units.

1. (i) Define the scope of Statistics.
- (ii) What are the advantages of graphical presentation of data ?
- (iii) Explain classification of data.
- (iv) What do you understand by central tendency ?
- (v) The mean and S.D. of 50 observations are 30 and 15 respectively. Find the new mean and S.D. if 5 are added to each observation.
- (vi) What are regression coefficients ?
- (vii) What is rank correlation ?
- (viii) Distinguish between positive and negative correlation.
- (ix) What are the components of time series ?
- (x) What is an index number ? 2×10=20

UNIT—I

2. What do you mean by tabulation ? What are the objectives and advantages of tabulation of data ? 20
3. (a) Discuss significance and limitations of statistics.
- (b) Draw a histogram from the following data :

Wages (Rs.)	No. of Workers	
10—20	8	
20—30	12	
30—40	20	
40—50	10	
50—60	7	
60—70	3	10,10

UNIT—II

4. Calculate the mean, median and mode from the following data :

Marks	Frequency	
0—20	3	
20—40	17	
40—60	27	
60—80	20	
80—100	9	6,7,7

5. (a) Calculate S.D. from the following data :

240.12, 240.13, 240.15, 240.12, 240.17

240.15, 240.17, 240.16, 240.22, 240.21

(b) Calculate Karl Pearson's coefficient of skewness :

Variable	Frequency	
0—10	5	
10—20	6	
20—30	11	
30—40	21	
40—50	35	
50—60	30	
60—70	22	
70—80	10	10,10

UNIT—III

6. (a) Find the coefficient of rank correlation for the following data :

x	y
38	8
23	8
30	19
4	1
6	10

x	y
6	0
55	15
14	4
6	1
47	14

- (b) Calculate Karl Pearson's correlation coefficient from the following data :

x	y
10	12
25	22
13	16
25	15
22	15
11	18
12	17
25	23
21	24
20	17

7. In a partially destroyed laboratory record of an analysis of correlation data, the following results only are legible.

Variance of $x = 9$

Regression equations :

$$8x - 10y + 66 = 0$$

$$40x - 18y = 214$$

Find on the basis of the above information :

- (i) The mean values of x and y
- (ii) Coefficient of correlation between x and y
- (iii) Standard deviation of y. 20

UNIT—IV

8. (a) Describe briefly the problems faced in the construction of an index number of prices.
- (b) Calculate Fisher's Ideal Index from the following data and prove that it satisfies both the time reversal and factor reversal tests :

Commodity	Base Year		Current Year	
	Price	Qty.	Price	Qty.
A	6	50	10	56
B	2	100	2	120
C	4	60	6	60
D	10	30	12	24

10,10

9. (a) Explain any one method of measuring seasonal variation in time series data.

(b) Fit a straight line trend for the following data and estimate the value for 2004 :

Year	Production (Rs. lakhs)	
1997	60	
1998	72	
1999	75	
2000	65	
2001	80	
2002	85	
2003	95	10,10